### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

### (19) World Intellectual Property Organization International Bureau



## 

(43) International Publication Date 5 February 2004 (05.02.2004)

**PCT** 

# (10) International Publication Number WO 2004/011835 A3

(51) International Patent Classification7:

F16L 23/00

(21) International Application Number:

PCT/US2003/023144

(22) International Filing Date:

24 July 2003 (24.07.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/398,698

26 July 2002 (26.07.2002) U

(71) Applicant (for all designated States except US): DAIRYM LTD. [US/US]; 1645 Cambridge Avenue, Flossmoor, IL 60422 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): KRENGEL, Theodore, H. [US/US]; 1645 Cambridge, Flossmoor, IL 60422 (US). BROWN, Curtis, R. [US/US]; 24405 Plum Valley Dr., Crete, IL 60417 (US).
- (74) Agent: SCOTT, Raymond, E.; Howard & Howard Attorneys, P.C., 39400 Woodward Avenue, Suite 101, Bloomfield Hills, MI 48334 (US).

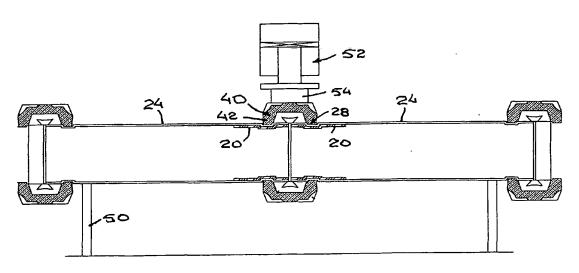
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 5 August 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PIPE COUPLING AND METHOD



(57) <u>Abstract</u>: A pipe coupling including coaxially aligned pipes (24), an internal tubular metal sleeve (20) having opposed ends press-fit into the open ends of the pipes, channel-shaped grooves (28) rolled into an outside diameter of each of the pipes and the sleeve (20), and a U-shaped circular metal housing (40) having leg portions (42) received in the grooves (28), retaining the pipes in coaxial alignment. The method includes press-fitting the opposed ends of the sleeve into the pipes, rolling a channel-shaped groove (28) into the pipes (24) and the sleeve (20), and assembling the legs (42) of the housing (40) in the grooves (28).